IN THE CLAIMS:

Please cancel Claims 22, 31 and 33 to 41 without prejudice or disclaimer of the subject matter presented therein and without conceding the correctness of their rejections. Please amend Claims 1, 2, 4 to 6, 8 to 10, 13, 15, 20, 21, 23, 28 to 30 and 42, and add new Claims 45 to 54 as follows. The claims, as pending in the subject application, read as follows:

1. (Currently Amended) A radiation detector having a wavelength conversion member made of column-shaped crystal for converting radiation into light and a sensor panel for detecting light converted by the wavelength conversion member,

wherein[[:]] the wavelength conversion member has a projection with a flat surface disposed in opposition to the sensor panel.

~~after projections formed on a surface of the wavelength conversion member to be bonded to the sensor panel are made small, the wavelength conversion member and the sensor panel are bonded together.~~

2. (Currently Amended) A radiation detector according to claim 1, wherein a height of the projection is 50 μm or lower. ~~each projection before bonding is 50 μm or lower.~~

3. (Original) A radiation detector according to claim 1, wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion

layer, and the adhesion layer has such a thickness as a resolution response to light converted by the wavelength conversion member is at least 0.7 or larger.

4. (Currently Amended) A radiation detector according to claim 1, further comprising a protective layer converting the wavelength conversion member. ~~wherein the whole surface of the wavelength conversion member is covered with a protective layer.~~

5. (Currently Amended) A radiation detector according to claim 1, wherein the wavelength conversion member is made of Cesium Iodide ~~caesium iodide~~.

6. (Currently Amended) A radiation detector having a wavelength conversion member made of column-shaped crystal for converting radiation into light and a sensor panel for detecting light converted by the wavelength conversion member,

wherein[[:]] the wavelength conversion member has a projection with a surface processed so as to be made parallel to a surface of the sensor panel.

~~after top surfaces of projections formed on a surface of the wavelength conversion member to be bonded to the sensor panel are made parallel to a surface of the sensor panel, the wavelength conversion member and the sensor panel are bonded together.~~

7. (Original) A radiation detector according to claim 6, wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the adhesion layer has such a thickness as a resolution response to light converted by the wavelength conversion member is at least 0.7 or larger.

8. (Currently Amended) A radiation detector according to claim [[6,]]1, further comprising a protective layer converting the wavelength conversion member. ~~wherein the whole surface of the wavelength conversion member is covered with a protective layer.~~

9. (Currently Amended) A radiation detector according to claim 6, wherein the wavelength conversion member is made of Cesium Iodide ~~caesium iodide~~.

10. (Currently Amended) A scintillator panel having a wavelength conversion member formed on a substrate, wherein the wavelength conversion member has a projection with a flat surface at a side opposite to the substrate. ~~converting radiation into light, and projections formed on a surface of the wavelength conversion member on the side opposite to the substrate being made equal to or smaller than a threshold value.~~

11. (Original) A scintillator panel according to claim 10, wherein the threshold value is 50 μm.

12. (Original) A radiation detector having the scintillator panel recited in claim 10 and a sensor panel for detecting light converted by the scintillator panel.

13. (Currently Amended) A scintillator panel having a wavelength conversion member for converting radiation into light,

wherein[[:]] a first protective layer is formed on the wavelength conversion member, projections on a surface of the wavelength conversion member are made small or removed from the upper side of the first protective layer, and thereafter a second protective layer is

formed.

14. (Original) A scintillator panel according to claim 13, wherein a height of each projection is 50 μum or lower before the second protective layer is formed.

15. (Currently Amended) A scintillator panel according to claim 13, wherein the wavelength conversion member is made of Cesium Iodide ~~caesium iodide~~.

16. (Original) A radiation detector having the scintillator panel recited in claim 13 and a sensor panel, wherein a plane of the scintillator panel whose projections and recesses are made small is bonded to a light reception plane of the sensor panel.

17. (Original) A radiation detector according to claim 16, wherein the second protective layer also serves as an adhesion layer for bonding the scintillator panel and the sensor panel.

18. (Original) A radiation detector according to claim 16, wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the projections are made small so that a thickness of the adhesion layer is 50 μm at a maximum or thinner.

19. (Original) A radiation detector according to claim 16, wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the adhesion layer has such a thickness as a resolution response to light converted by the wavelength conversion member is at least 0.7 or larger.

20. (Currently Amended) A radiation detector according to claim 16, wherein the wavelength conversion member is made of Cesium Iodide ~~caesium iodide~~.

21. (Currently Amended) A method of manufacturing a scintillator panel having a wavelength conversion member formed on a substrate, the wavelength conversion member converting radiation into light, the method comprising a step of:

making smaller projections formed on a surface of the wavelength conversion member of a column-shaped crystal structure ~~on the side opposite to the substrate equal to or smaller than a threshold value~~.

22. (Cancelled).

23. (Currently Amended) A method according to claim 21, wherein the height of the projection after the step of making smaller is 50 μm or larger. ~~threshold value is 50 μm.~~

24. (Original) A method according to claim 21, wherein the projections are made small by crushing the projections.

25. (Original) A method according to claim 21, wherein the projections are made small by scraping the projections.

26. (Original) A method according to claim 21, wherein the projections are made small by cutting off portions of the projections.

27. (Original) A method according to claim 21, wherein the projections are made small by using laser.

28. (Currently Amended) A method according to claim 23 [[21]], wherein prior to making the projections smaller, ~~are made small,~~ a height of each projection is measured, and if the height of the projection exceeds 50 μm, the projection is made smaller. ~~a predetermined threshold value, the projection is made small so that the height is equal to or smaller than the threshold value.~~

29. (Currently Amended) A method according to claim 28 [[1]], wherein each projection is measured in accordance with a detection result of a contrast of a surface image of the wavelength conversion member.

30. (Currently Amended) A method of manufacturing a radiation detector having a scintillator panel provided with a wavelength conversion member for converting radiation into light and a sensor panel for detecting light converted by the wavelength conversion member, the method comprising the steps of:

making smaller projections formed on a surface of the wavelength conversion member of a column-shape crystal structure on a substrate; and

bonding the scintillator panel with the sensor panel after the step of making smaller the projections.

~~wavelength conversion member for converting radiation into light and a sensor panel for detecting light converted by the wavelength conversion member, the method comprising a step of:~~

~~after making small projections formed on a surface of the wavelength conversion member to be bonded to the sensor panel, bonding the wavelength conversion member and the sensor panel.~~

31. (Cancelled).

32. (Original) A method according to claim 30, wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the

projections are made small so that a thickness of the adhesion layer is 50 μm at a maximum or thinner.

33 to 41. (Cancelled).

42. (Currently Amended) An apparatus for manufacturing a scintillator panel having a wavelength conversion member for converting radiation into light, the apparatus comprising:

means for detecting projections ~~and recesses~~ formed on a surface of the wavelength conversion member of column-shaped crystal structure on a substrate;

means for measuring a height difference of the projections ~~and recesses~~;

means for comparing the height difference with a predetermined threshold value; and

means for reducing the sizes of the projections ~~and recessed~~ in accordance with a comparison result.

43. (Original) An apparatus according to claim 42, wherein the threshold value is set to such a value as a resolution response of an image output through radiation detection takes at least a value of 0.7 or larger.

44. (Original) A radiation detector system having the radiation detector recited in claim 1, image processing means for processing signals output from the radiation detector as an image, recording means for recording signals output from the image

processing means, display means for displaying signals output from the display means, and transmission means for transmitting signals output from the image processing means.

45. (New) A method of manufacturing a scintillator panel having a wavelength conversion member for converting radiation into light disposed on a substrate comprising steps of:

forming a first protective layer on the wavelength conversion member of a column-shaped crystal structure formed on the substrate;

making smaller or removing through the first protective layer a projection on a surface of the wavelength conversion member; and

forming a second protective layer on the first protective layer after the step of making smaller or removing the projection.

46. (New) A method according to Claim 45, wherein a height of the projection after the step of making smaller is 50 μm or smaller.

47. (New) A method according to Claim 45, wherein the projection is made smaller by crushing the projection.

48. (New) A method according to Claim 45, wherein the projection is made smaller by abrading the projection.

49. (New) A method according to Claim 45, wherein the projection is made smaller by cutting off the projection.

50. (New) A method according to Claim 45, wherein the projection is made smaller by a laser.

51. (New) A method according to Claim 46, wherein prior to making smaller the projection, a height of the projection is measured, and, when the height measured exceeds 50 μm, the projection is made smaller.

52. (New) A method according to Claim 51, wherein the measuring of the height of the projection is conducted based on a result of detecting an image contrast of a surface of the first protective layer.

53. (New) A method of manufacturing a radiation detector having a scintillator panel provided with a wavelength conversion member for converting radiation into light disposed on a substrate, and a sensor panel for detecting light converted by the wavelength conversion member, comprising steps of:

forming a first protective layer on the wavelength conversion member of column-shaped crystal structure formed on the substrate;

making smaller or removing through the first protective layer a projection on a surface of the wavelength conversion member;

forming a second protective layer on the first protective layer after the step of making smaller and removing the projection; and

bonding the scintillator panel with the sensor panel after the step of forming the second protective layer.

54. (New) A method according to Claim 53, wherein

the scintillator panel and the sensor panel are bonded together through an adhesive layer with a thickness of 50 μm or smaller.